CLAIMS

What is claimed is:

1. A method for making an optically readable media unreadable by a play process, comprising steps of:

providing the media with an optically activated mechanism that degrades the reflectivity of a surface wherein information is encoded;

exposing the media to optical radiation for reading out the information; and

during the step of exposing, initiating the operation of the optically activated mechanism.

2. A method as in claim 1, wherein the step of initiating is comprised of steps of:

generating singlet oxygen in a layer disposed on the media; and

reacting the singlet oxygen with a metal-containing layer for oxidizing the surface of the metal-containing layer, thereby degrading the reflectivity of the surface.

3. A method as in claim 2, wherein the step of generating includes a step of diffusing the singlet oxygen through a diffusion barrier that is disposed between the layer and the metal-containing layer.

4. A method for making an optically readable media unreadable by a play process, comprising steps of:

providing the media with an optically activated mechanism that causes a defocusing of a readout beam, thereby degrading reflection of the readout beam from a surface wherein information is encoded;

exposing the media to optical radiation for reading out the information; and

during the step of exposing, initiating the operation of the optically activated mechanism.

5. A method as in claim 4, wherein the step of initiating is comprised of steps of:

generating an optical intensity gradient in a layer disposed on the media; and

in response to the generated gradient, deforming a surface of the layer resulting in at least one of readout beam aberration or a degradation of a readout tracking function.

6. A method as in claim 5, wherein the step of providing provides the layer so as to comprise an azobenzene containing polymer.

7. A method as in claim 4, wherein the step of initiating is comprised of steps of:

irradiating a photocurable polymer region that comprises the media; and

in response to the irradiation, photopolymerizing the polymer, thereby changing an index of refraction of the polymer resulting in readout beam aberration.

8. An optically readable media capable of being made unreadable by a play process, said media comprising an optically activated mechanism that is responsive to light used to readout information for degrading the reflectivity of a surface wherein the information is encoded.

9. A media as in claim 8, wherein said mechanism is comprised of a photosensitizer compound for reacting with oxygen molecules that are preloaded within a layer for generating singlet oxygen in the layer, the singlet oxygen reacting with a metal-containing layer for oxidizing the surface of the metal-containing layer, thereby degrading the reflectivity of the surface.

10. A media as in claim 9, and further comprising a diffusion barrier disposed between said layer and said metal-containing layer.

11. An optically readable media capable of being made unreadable by a play process, said media comprising an optically activated mechanism that is responsive to light used to readout information for defocusing a readout beam, thereby degrading reflection of the readout beam from a surface wherein information is encoded.

12. A media as in claim 11, wherein said mechanism is comprised of a layer of polymer that is responsive to an optical intensity gradient generated by said readout beam for deforming a surface of said layer resulting in readout beam aberration.

13. A media as in claim 12, wherein said layer comprises an azobenzene containing polymer.

14. A media as in claim 11, wherein said mechanism is comprised of at least one region comprised of

photoresponsive polymer that is responsive to the readout beam for being photopolymerized, thereby changing an index of refraction of the photocurable polymer resulting in readout beam aberration.

15. A method for making an optically readable media unreadable, comprising steps of:

providing the media with a layer that is comprised of a volatile component and at least one other component;

removing at least some of volatile component; and

causing an increase in at least one of photoabsorption or scattering or surface roughness with the remaining component.

16. A method as in claim 15, wherein the other component is comprised of a lactone dye.

17. A method as in claim 15, wherein the other component is comprised of crystal violet lactone.

18. A method as in claim 15, wherein the layer is comprised of poly-p-(hydroxystyrene), ethanol, crystal violet lactone and N-methyl pyrrolidinone.

19. A method as in claim 15, wherein the layer is comprised of poly-p-(hydroxystyrene), ethanol, crystal violet lactone, ammonia, N-methyl pyrrolidinone, and formaldehyde.

20. A method as in claim 15, wherein the layer is comprised of cellulose acetate butyrate, ethyl acetate, silica gel, and benzyl alcohol.

21. A method as in claim 15, wherein the layer is comprised of a salt of a volatile amine, a non-volatile acid component and a lactone dye.

22. A method as in claim 15, wherein the layer is comprised of a salt of a volatile amine, a non-volatile acid component and a pH indicator dye.

23. A method as in claim 15, wherein the layer is comprised of a water damp polymer film containing a pH indicator dye, wherein during storage the layer is exposed to an atmosphere of a gas whose water solution is one of acidic or basic, and wherein upon removal from storage a volatile gas evaporates from the water damp film, and the pH changes causing a color change in the pH indicator dye.

24. A method as in claim 15, and further comprising a preliminary step of constructing the layer as a separate component layer, and then a step applying the separate component layer to a surface of the optically readable media.

25. A method for making an optically readable media unreadable, comprising steps of:

providing the media with a layer that is comprised of a sensitive inorganic material;

exposing the layer to an atmosphere containing a substance comprised of at least one of water vapor or carbon dioxide; and

reacting the inorganic material with the substance to cause an increase in at least one of photoabsorption or scattering or surface roughness.

26. A method as in claim 25, wherein the layer is comprised of KBr.

27. A method as in claim 25, wherein the layer is comprised of CsF.

28. An optically readable media comprising a patterned structure for encoding information that can be readout by application of light, said optically readable media further comprising a layer that is comprised of a volatile component and at least one other component wherein removing at least some of volatile component causes an increase in at least one of photoabsorption or scattering or surface roughness with the remaining component, thereby rendering at least a portion of the encoded information unreadable.

29. A media as in claim 28, wherein the other component is comprised of a lactone dye.

30. A media as in claim 28, wherein the other component is comprised of crystal violet lactone.

31. A media as in claim 28, wherein the layer is comprised of poly-p-(hydroxystyrene), ethanol, crystal violet lactone and N-methyl pyrrolidinone.

32. A media as in claim 28, wherein the layer is comprised of poly-p-(hydroxystyrene), ethanol, crystal violet lactone, ammonia, N-methyl pyrrolidinone, and formaldehyde.

33. A media as in claim 28, wherein the layer is comprised of cellulose acetate butyrate, ethyl acetate, silica gel, and benzyl alcohol.

34. A media as in claim 28, wherein the layer is

comprised of a salt of a volatile amine, a non-volatile acid component and a lactone dye.

35. A media as in claim 28, wherein the layer is comprised of a salt of a volatile amine, a non-volatile acid component and a pH indicator dye.

36. A media as in claim 28, wherein the layer is comprised of a water damp polymer film containing a pH indicator dye, wherein during storage the layer is exposed to an atmosphere of a gas whose water solution is one of acidic or basic, and wherein upon removal from storage a volatile gas evaporates from the water damp film, and the pH changes causing a color change in the pH indicator dye.

37. A media as in claim 28, wherein said layer is applied by one of a coating or printing process or as an adhesively affixed separate component layer.

38. An optically readable media comprising a patterned structure for encoding information that can be readout by application of light, said optically readable media further comprising a layer that is comprised of a sensitive inorganic material wherein exposure of said layer to an atmosphere containing a substance causes a reaction between the inorganic material and the substance to cause an increase in at least one of photoabsorption or scattering or surface roughness, thereby rendering at least a portion of the encoded information unreadable.

39. A media as in claim 38, wherein the layer is comprised of KBr.

40. A media as in claim 38, wherein the layer is comprised of CsF.

41. A method for making an optically readable media unreadable, comprising steps of:

providing the media with a surface layer having a planar surface topography; and

subsequent to or during a first readout of the optically readable media, modifying at least a portion of the planar surface topography to a non-planar surface topography by the use of at least one of a photoresponsive polymer, a removal of a substance from the surface layer to the atmosphere, or by interaction with a substance in the atmosphere without significantly modifying a transparency of the surface layer to a readout beam, wherein a deviation of the non-planar surface layer topography from the planar surface layer topography is sufficient to detrimentally affect at least a tracking operation of a readout device that generates the readout beam.